

Release Notes

hp StorageWorks SAN Director 2/128 Fabric OS 4.2.x

Second Edition (April 2004)

Part Number: AV-RVUUB-TE

This document contains last-minute and supplemental information about Fabric OS version 4.2.x firmware for the HP StorageWorks SAN Director 2/128. In the event of conflicting information between these Release Notes and other documents in this product release, the Release Notes take precedence.

For the latest version of these Release Notes and other Fabric OS v4.2.x documentation, access the HP Storage web site at: <http://www.hp.com/country/us/eng/prodserv/storage.html>.



© Copyright 2004 Hewlett-Packard Development Company, L.P.

Hewlett-Packard Company makes no warranty of any kind with regard to this material, including, but not limited to, the implied warranties of merchantability and fitness for a particular purpose. Hewlett-Packard shall not be liable for errors contained herein or for incidental or consequential damages in connection with the furnishing, performance, or use of this material.

This document contains proprietary information, which is protected by copyright. No part of this document may be photocopied, reproduced, or translated into another language without the prior written consent of Hewlett-Packard. The information contained in this document is subject to change without notice. The only warranties for HP products and services are set forth in the express warranty statements accompanying such products and services. Nothing herein should be construed as constituting an additional warranty. HP shall not be liable for technical or editorial errors or omissions contained herein.

Windows® is a U.S. registered trademark of Microsoft Corporation.

UNIX® is a registered trademark of The Open Group.

Java™ is a US trademark of Sun Microsystems, Inc.

Linux is a U.S. registered trademark of Linus Torvalds.

Hewlett-Packard Company shall not be liable for technical or editorial errors or omissions contained herein. The information is provided "as is," without warranty of any kind, and is subject to change without notice. The warranties for Hewlett-Packard Company products are set forth in the express limited warranty statements for such products. Nothing herein should be construed as constituting an additional warranty.

SAN Director 2/128
Fabric OS 4.2.x Release Notes
Second Edition (April 2004)
Part Number: AV-RVUUB-TE

About This Document

This section identifies the audience of these Release Notes and provides a high-level description of the information it contains.

Release Notes Information

These Release Notes cover the following major topics:

- [Overview](#), page 3
- [Documentation](#), page 4
- [Standards Compliance](#), page 5
- [Important Notes](#), page 6
- [Commands Modified in v4.2.x](#), page 20
- [Documentation Updates](#), page 20
- [Issues and Workarounds](#), page 22

Audience

These Release Notes are intended for systems administrators and technicians who are responsible for installing, operating, and maintaining Fabric OS version 4.2.x.

Overview

HP Fabric OS 4.2.x provides the following enhancements for the SAN Director 2/128:

- Reduced fabric configuration downtime. Extended Edge PID for mixed fabrics eliminates host reboot for hosts that statically bind PIDs.
- Improved fabric diagnostics:
 - The `pathinfo` command displays path information between any two ports of a fabric.
 - The diagnostics monitor compact flash utilization and clean the file systems during periods of high utilization.
 - The `supportshow` command has improved functionality.
 - Hardware watchdog failures capture a kernel trace dump prior to reset.

Improvements

The following improvements have been made to the Fabric OS software since the last HP 4.x release:

- Secure Telnet may now be connected with two LAN cards.
- Improvements have been made to the reboot code.
- Problems that caused compact flash full have been resolved.
- We have increased the number of HBAs that can be displayed by Web Tools.
- We have improved the reliability of firmware download on an active fabric.
- A `firmwaredownload` is now successful to a single CP SAN Director 2/128 chassis through Fabric Manager and Web Tools.
- Web Tools events now use adjusted timezone time, rather than coordinated universal time (UTC).

Supported Switches

Fabric OS v4.2.x supports the HP StorageWorks SAN Switch 2/8V, 2/16N, 2/16V, 2/32, Core Switch 2/64, and SAN Director 2/128.

Technical Support

Contact Hewlett-Packard support for hardware, firmware, and software support, including product repairs and part ordering. To assist your support representative and to expedite your call, have the following information available when you call.

- Technical support contact number, if available
- Switch model
- Switch operating system version
- Error messages received
- Output from `supportshow` command
- Detailed problem description and specific questions
- Description of any troubleshooting steps already performed and results

Documentation

This section discusses documentation associated with the Fabric OS 4.2.x.

Other Fabric OS Documentation

Additional documentation, including white papers and best practices documents, is available at the HP web site:

<http://welcome.hp.com/country/us/eng/prodserv/storage.html>.

Note: HP has made every effort to provide you with the most up-to-date Web retrieval procedures available at time of print. Note, however, that Web page links and pointers are subject to change.

To access the technical documentation:

1. Locate the **networked storage** section of the Web page.
2. Under **networked storage**, locate the **by type** subsection.
3. Click **SAN infrastructure**. The **SAN infrastructure** page displays.
4. Locate the **Fibre Channel Switches** section.
5. Locate the **B-Series Fabric** subsection.
6. Click the name of the switch for which you are seeking information. The switch overview page displays.
7. Locate the **product information** section.
8. Click **technical documents**.
9. Select the applicable documents.

For information about Fibre Channel standards, visit the Fibre Channel Industry Association web site, located at <http://www.fibrechannel.org>.

Standards Compliance

HP products conform to these standards in a manner consistent with accepted engineering practices and procedures. In certain cases, HP may add proprietary supplemental functions to those specified in the standards. We verify conformance with Fibre Channel Standards by subjecting our switches to SANmark Conformance Tests developed by the Fibre Channel Industry Association. Our switches have earned the SANmark logo indicating such conformance. SANmark is a limited testing program and does not test all standards or all aspects of standards.

HP Fabric OS 4.2.x conforms to the following Fibre Channel Standards:

- FC-AL ANSI X3.272: 1996
- FC-AL-2 NCIT S 332: 1999
- FC-FLA NCIT S TR-20: 1998
- FC-GS-2 NCIT S 348-2000 Rev 7.01
- FC-FG ANSI X3.289: 1996
- FC-PH ANSI X3.230: 1994
- FC-PH-2 ANSI X3.297 X3.297: 1997
- FC-PH-3 ANSI X3.303: 1998
- FC-PLDA NCIT S TR-19: 1998
- FC-SW-2 Rev 5.3
- FC-VI Rev 1.61
- FC-MI Rev 1.92
- FC-BB Rev 4.7
- FC-FS Rev 1.7
- FC-BB-2 Rev 5.3
- IPFC RFC 2625
- FCP ANSI X3.269: 1996
- FCP-2 Rev 7

Important Notes

This section provides information you should be aware of when running Fabric OS 4.2.x.

OS Requirements

HP recommends using the *latest* software release versions to get the greatest benefit from the SAN.

Mixed Fabric Environment with Different Switch Platforms

Fabric OS v2.6.2, v3.1.2, and v4.2.x introduced a new switch PID format: Extended Edge PID (Format 2). Extended Edge PID is useful if you introduce a Fabric OS v4.2.x switch into a fabric consisting solely of Fabric OS v2.x/v3.x switches. Before adding a Fabric OS v4.2.x switch to such a fabric, refer to the *HP StorageWorks Fabric OS 4.2.x Procedures User Guide* for information on the Extended Edge PID format.

Note: Note that in order to use the Extended Edge PID format, Fabric OS v2.6.2, v3.1.2, and v4.2.x must be deployed together, as applicable, to the switches.

If Extended Edge PID is set (before a downgrade from the current Fabric OS release to an earlier Fabric OS release that does not support the Extended PID format), PID needs to be set back to a supported format, such as Core PID (format 1) or native PID (format 0).

Advanced Web Tool Updates

When using a mixed fabric—that is, a fabric that contains v4.x, v3.x, and v2.x switches—HP recommends that you use the most advanced switches to control the fabric. For example, use the v4.x switches as the primary Fibre Channel Switch (FCS), as the location to perform zoning tasks, and as the time server. HP also recommends that you use the most recently released firmware to control the fabric.

If you use Advanced Web Tools to change the switch name, the HP StorageWorks SAN Director 2/128 Telnet console prompt does not update to the new name until a new Telnet window is opened.

If a dialog box is displayed from the Switch Admin window of Advanced Web Tools and the user selects another dialog box from Advanced Web Tools, a window display error occurs.

Workaround: HP recommends Java™ 1.4.1_03.

Two-Domain and Four-Domain Fabric Licensing

If your fabric includes a switch with a license for a limited number of switches in the fabric and the fabric exceeds the limit, Advanced Web Tools allows a 45-day grace period during which you can still monitor the switch. Advanced Web Tools periodically displays warning messages.

These messages warn you that your fabric size exceeds the supported switch configuration limit and tells you how long you have before Advanced Web Tools will be disabled. After the 45-day grace period, you will no longer be able to launch Advanced Web Tools from the switch if it still exceeds the limit.

Note: Two domain and our domain fabric licensing is applicable only to 2 Gb/sec switches.

Browser Window Response After Failover

A browser window might stop responding after an HA failover immediately after a zoning configuration is enabled or disabled. It is likely that the web daemon was terminated by the HA failover before the HTTP request was returned.

Workaround: If the HA module does not respond, close the window and relaunch the module. If the module is locked, shut down and relaunch the Web Tools application.

Switch View Display Issue

If you frequently enable or disable a switch or perform a power cycle, the Switch View may not display properly. Launching other Web Tools components might then cause a browser crash.

Workaround: Upgrade your Java Plug-in to 1.4.1_06 or later, if you are running Windows XP.

Installing Mozilla 1.4 on Solaris 8 and Solaris 9

For instructions to install Mozilla 1.4 on Solaris 8 and Solaris 9, go to the web site:

http://ftp.mozilla.org/pub/mozilla.org/mozilla/releases/mozilla1.4/mozilla-sparc-sun-solaris2.8_1.4.readme

Mozilla Browser Support for Switch Admin Module

The Mozilla browser does not support the Switch Admin module properly in Fabric OS v2.6.x. In Fabric OS v2.6.2, a warning message is displayed. No warning message is displayed in other 2.6.x versions.

Workaround: Use Netscape 4.7.7 or later.

Browser, OS, and Java Plug-in Support

Advanced Web Tools browser, operating system, and Java Plug-in support is updated for Fabric OS v4.2.x. [Table 1](#) identifies the supported browsers, operating systems, and Java Plug-ins for this release. Go to the hp.com web site for the latest list of supported operating systems.

Table 1: Browsers, OSs, and Java Plug-ins

Operating System	Browser	Java Plug-in
HP-UX 11.00	Mozilla 1.4 or later	1.4.2_00 or later (up to but not including 1.5)
HP-UX 11.11 (PA 32-bit & PA 64-bit)	Mozilla 1.4 or later	1.4.2_00 or later (up to but not including 1.5)
HP-UX 11.23 (IA 64-Bit)	Mozilla 1.4 or later	1.4.2_00 or later (up to but not including 1.5)
HP Tru64 UNIX® 5.1B	Mozilla 1.4	1.4.1_02
HP Tru64 UNIX 5.1A	Mozilla 1.4	1.4.1_02
HP OpenVMS 7.3-1 (64-bit)	Secure Web Browser (SWB 1.4)	1.4.1_02
HP OpenVMS 7.3-2 (64-bit)	Secure Web Browser (SWB 1.4)	1.4.1_02
HP Open VMS 7.3-x (Itanium)	Secure Web Browser (SWB 1.4)	1.4.1_02
AIX 5.1	Mozilla 1.4	1.4.1_01
AIX 5.2	Mozilla 1.4	1.4.1_01
AIX 5.3	Mozilla 1.4	1.4.1_01
Red Hat Linux® 7.3	Mozilla 1.4 or later	1.4.2_02 or later (up to but not including 1.5)
Red Hat Linux 8.0	Mozilla 1.4 or later	1.4.2_02 or later (up to but not including 1.5)
Red Hat Enterprise Linux AS 2.1 (IA32 & IA64)	Mozilla 1.4 or later	1.4.2_02 or later (up to but not including 1.5)
Red Hat Enterprise Linux AS 3.0 (IA32 & IA64)	Mozilla 1.4 or later	1.4.2_02 or later (up to but not including 1.5)
Red Flag Linux (32-bit)	Mozilla 1.4 or later	1.4.2_02 or later (up to but not including 1.5)
United Linux 1.0 SUSE 8 (IA32)	Mozilla 1.4 or later	1.4.2_02 or later (up to but not including 1.5)

Table 1: Browsers, OSs, and Java Plug-ins (Continued)

Operating System	Browser	Java Plug-in
United Linux 1.0 SUSE 8 (IA64)	Mozilla 1.4 or later	1.4.2_02 or later (up to but not including 1.5)
United Linux 2.0	Mozilla 1.4 or later	1.4.2_02 or later (up to but not including 1.5)
Solaris 2.8, 2.9	Mozilla 1.2.1 (recommended) Netscape 7.0 Netscape Communicator 4.78	1.4.2
Solaris 7, 8, 9, 10	Mozilla 1.2.1 (recommended) Netscape 7.0 Netscape Communicator 4.78	1.4.2
Windows 2000	IE 6.0 SP1	1.3.1_04 or 1.4.1_02 (recommended)
Windows 2003	IE 6.0 SP1	1.3.1_04 or 1.4.1_02 (recommended)
Windows XP	IE 6.0 SP1	1.3.1_04 or 1.4.1_02 (recommended)

The additional supported browsers, operating systems, and Java Plug-ins introduce limitations when using mixed OS versions in Advanced Web Tools v4.2.x. These limitations are described in [Table 2](#).

Table 2: Limitations Using Mixed OS Versions

Launch Switch Environment	Issue and Workaround
<p>Firmware: version earlier than Fabric OS v2.6.2, v3.1.2, or v4.2.x</p> <p>Operating System: any supported operating system (with supported browser)</p> <p>Browser: any supported browser (on a supported operating system)</p>	<p>When trying to access a switch running Fabric OS v2.6.2, 3.1.2, or 4.2.x from the launch switch, Switch Explorer displays a null pointer exception, and the <code>SwitchInfo</code> applet does not display. Switch Explorer does not work properly with switches running the latest firmware.</p> <p>Workaround: Use a launch switch running Fabric OS v2.6.2, v3.1.2, or v4.2.x or later to access the switch.</p>
<p>Firmware: version earlier than Fabric OS v2.6.2, v3.1.2, or v4.2.x</p> <p>Operating System: any supported operating system (with supported browser)</p> <p>Browser: any supported browser (on a supported operating system)</p>	<p>When trying to perform end-to-end monitoring (Performance Monitor) on a SAN Director 2/128, SAN Switch 2/8V is displayed as a 16-port switch.</p> <p>Workaround: Use a launch switch running Fabric OS v4.2.x or later to perform end-to-end monitoring on the switch.</p>
<p>Firmware: version prior to Fabric OS v2.6.2, 3.1.2, or 4.2.x</p> <p>Operating System: any supported operating system (with supported browser)</p> <p>Browser: any supported browser (on a supported operating system)</p>	<p>When trying to perform zoning on a SAN Director 2/128, the SAN Director 2/128 is displayed as a 16-port switch.</p> <p>Workaround: If you are running Secure Fabric OS, select a switch running Fabric OS v2.6.2, v3.1.2, or v4.2.x or later as the primary FCS switch. If you are not running Secure Fabric OS, use a launch switch running Fabric OS v2.6.2, v3.1.2, or v4.2.x or later to perform zoning on the switch.</p>

Table 2: Limitations Using Mixed OS Versions (Continued)

Launch Switch Environment	Issue and Workaround
Firmware: Fabric OS v2.6.2, v3.1.2, or v4.2.x Operating System: any supported operating system (with supported browser) Browser: any supported browser (on a supported operating system)	<p>The Name Server table does not display properly for a switch running firmware versions earlier than Fabric OS v2.6.2, v3.1.2, or v4.2.x.</p> <p>Workaround: If secure mode is enabled, select a switch running Fabric OS v2.6.2, v3.1.2, or v4.2.x or later as the primary FCS switch. If secure mode is not enabled, use a launch switch running Fabric OS v2.6.2, v3.1.2, or v4.2.x or later to access the Name Server table on the switch.</p>
Firmware: version earlier than Fabric OS v2.6.2, v3.1.2, or v4.2.x Operating System: Solaris Browser: Netscape	<p>Any switches running Fabric OS v2.6.2, v3.1.2, or v4.2.x or later are not supported through Netscape.</p> <p>Workaround: Netscape is not a supported browser for switches running Fabric OS v2.6.2, v3.1.2, or v4.2.x or later. Use Mozilla browser to manage all of your switches from a Solaris operating system. See Table 1 supported browsers.</p>
Firmware: version earlier than Fabric OS v2.6.1, v3.0.x, or v4.0.x Operating System: Windows Browser: Internet Explorer	<p>When you are running Fabric View, the browser crashes.</p> <p>Workaround: Use a launch switch that runs Fabric OS versions v2.6.1, v3.0.x, or v4.0.x or later so that you can use Switch Explorer (instead of Fabric View).</p>

Other Notes

[Table 3](#), [Table 4](#), and [Table 5](#) list important information for Fabric OS v4.2.x.

Table 3: SAN Director 2/128 Information

SAN Director 2/128	Description
CP blade	The SAN Director 2/128 CP contains electronics that provide internal routing bandwidth, and are always active on both CPs. Removal of a CP might affect user performance and therefore should not occur until a replacement CP is ready to be installed.
Power supplies	A fully configured SAN Director 2/128 with eight port cards and two CPs is capable of running on a single power supply. Therefore, two power supplies provide 2N redundancy. To maintain redundancy of AC input, one power supply must be in an even-numbered slot and one in an odd-numbered slot. The default configuration is for the power supplies to be in slots 1 and 2.
Card seating	<p>Follow the procedure below to ensure that Port Cards and Control Processor (CP) cards are properly installed into your SAN Director 2/128:</p> <ol style="list-style-type: none">1. Install the leading edge of the CP or Port Card into the appropriate slot on the card cage.2. Push the front surface of the card (SFP cage side) carrier near the center with your hand until the top and bottom ejectors engage the upper and lower ejector plates (do not hold onto the ejectors as you push).3. Press down on both ejectors at the same time with equal force to seat the blade.4. Tighten the top thumb screw first.

Table 4: Small Form Factor Pluggables

Part Numbers	Description*	Max Distance at 2 GB
DS-DMSHT-AA 300834-B21 221470-B21 292003-001 A6515A	500 m 2 Gb SFF-SW	300 m
DS-DMLNG-AA 300835-B21 292004-001 A6516A	10 km LD Opti Tran ALL	10 km
DS-DMEXT-AA 300836-B21 292005-001	35 km ExtRch Opti K ALL	35 km
* SFF = small form factor.		

Table 5: Fabric OS Area Information

Fabric OS Area	Description
Ethernet port IP addresses	When a SAN Director 2/128 fails over to its standby CP for any reason, the IP addresses for the two logical switches move to that CP blade's Ethernet port. This might cause informational ARP address reassignment messages to appear on other switches in the fabric. This is normal behavior, because the association between the IP addresses and MAC addresses has changed.
Extended links	For 50-km extended links, you have a choice of configuring a port as an LD port or an L1 port. LD ports maintain full link speeds of 103 Mbit/sec. L1 ports have link speeds of 99 Mbit/sec; you can configure all four ports of a quad as L1 ports, but you can configure only one port in a quad as an LD port.
Fabric configuration	During fabric configuration, the countdown message that used to appear on the console is removed starting with Fabric OS v2.6.2, v3.1.2, and v4.2.x. The fabric reconfiguration message is now captured in the error log. For details, refer to the diagnostic messages in the <i>HP StorageWorks Diagnostic and System Error Messages 4.2.x Reference Guide</i> .

Table 5: Fabric OS Area Information (Continued)

Fabric OS Area	Description
Fabric Device Management Interface (FDMI)	An HBA will be allowed to register even though the originating port is not on the HBA's registered port list. This is intended behavior, included to test error cases.
Fabric OS: CLI commands, failover, and port disable	Changing port configurations during a failover might cause ports to be disabled. Reissue the command after the failover is complete to bring the ports online.
Fabric OS: commands	Under the root account, issuing Fabric OS commands in parallel through scripts could cause the kernel task to consume excessive memory. Workaround: When using scripts to issue Fabric OS commands, wait for one command to finish before issuing another.
Fabric OS: switch beaconing	Switch beaconing is not preserved across a failover. If you start beaconing, a failover causes all lights to stop flashing. Workaround: If this occurs, reissue the command to resume switch beaconing.
Fabric OS: switch reboot and blade repair	Switch reboot will fail in the SAN Director 2/128 if there are faulty port blades. Note: Verify that all blades are in working order before performing a switch reboot. Switch reboot is meant to be issued after all repairs are complete. If you perform a switch reboot and find a faulty blade, remove the blade and reboot will continue. Workaround: Identify and remove the faulty blade, using the <code>slotshow</code> command.
Fabric routing, Fabric Manager: domain overlap	Issuing a <code>configdefault</code> command followed by reboot or switch disable or enable can cause the fabric to segment due to possible domain overlap. Workaround: Before rebooting the fabric, ensure that all switches are properly configured to avoid domain overlap between the logical switches.
Fabric Watch: e-mail alert error message	If an event occurs while Fabric Watch e-mail alerts are being enabled, the message <code>ErrLog: Error Level=3 [(null)]</code> is captured to the system error log. This message is from SMTP and can be ignored.
Firmware download	During a firmware download, rebooting or power cycling the CPs could corrupt the compact flash. CAUTION: Do not attempt to power off the CP board during firmware download, to avoid high risk of corrupting your flash.

Table 5: Fabric OS Area Information (Continued)

Fabric OS Area	Description
Firmware download	<p>Fabric OS v4.1.x and v4.2.x nondisruptive firmware download allows for firmware downgrades and upgrades; however, you might see warning messages such as the following:</p> <pre>0x239 (fabos): Switch: 0, Info PDM-NOTFOUND, 4, File not found (/etc/fabos/mii.0.cfg)</pre> <p>These warnings can be ignored.</p>
HA switch reboot failure	<p>When a switch reboot or a failover occurs before POST is complete, the HA resynchronization is disrupted. HA does not resynchronize until POST completes.</p> <p>CAUTION: Allow POST to complete before performing a switch reboot or failover, to avoid disruptive failover.</p>
Invalid Gateway IP address error message	<p>The user sees the following message on the console during startup when the Ethernet IP and Gateway IP addresses are set to the defaults:</p> <pre>SIOCADDRT: Invalid argument.....ip.c:311:Invalid gateway IP address 0.0.0.0</pre> <p>This is a display issue only and does not affect the functionality of the switch.</p>
IP addresses	<p>CAUTION: Do not set a switch or CP IP address for the Ethernet interface to 0.0.0.0.</p>
License removal	<p>When a user removes a license from the switch, the feature is not disabled until the switch is rebooted or a switch disable or enable is performed.</p>
LTO 2 tape drive support	<p>When using the LTO 2 tape drive, the user must enter the following command on both Fabric OS v3.x and v4.x:</p> <pre>switch> portcfggport port# where drive is plugged in</pre> <p>This allows the tape drive to function in point-to-point mode rather than in loop mode.</p>
OS hardware	<p>Bringing up port blades during a failover could cause the port cards to come up in a disabled state. This is a rare occurrence; when it happens, bring up the port blade again, after the failover on the SAN Director 2/128.</p>
rsh and rlogin	<p>The programs <code>rsh</code> and <code>rlogin</code> are not supported in this release. If you try to use an <code>rsh</code> or <code>rlogin</code> client, Fabric OS rejects the login attempt; however, because most <code>rsh</code> and <code>rlogin</code> clients continue to retry the login for several seconds before timing out, your system appears to hang.</p>
Security: default password length	<p>The initial login prompt for a switch accepts a maximum password length of eight characters. Any characters beyond the eighth are ignored.</p>

Table 5: Fabric OS Area Information (Continued)

Fabric OS Area	Description
Security: empty policies	<p>CAUTION: If Telnet, API, and serial port access policies are empty, the user will not be able to communicate with the switch.</p> <p>Workaround: Contact your switch provider for the recovery procedure.</p>
Security: error counter	<p>Telnet security errors that arrive in quick succession are recorded as a single violation by the telnet error counter. For example, a login error from a host whose IP address is 192.168.44.247 is logged as follows:</p> <p>Security violation: Login failure attempt via TELNET/SSH/RSN. IP Addr: 192.168.44.247</p> <p>If another login violation occurs immediately, the message remains the same and only the error counter is incremented.</p>
Security: fabric segment	<p>When two secure fabrics are continuously joined and separated while the CPU is under heavy load, the fabric segments after approximately 30 cycles.</p>
Security: FCS list	<p>Adding switches to the FCS list does not automatically join the switches in a secure fabric. Add the switches to the FCS list of the new switches and the target fabric. Reset the version stamp to 0 and either reset the E_Ports or perform a switch disable and enable for the switches to join.</p>
Security: HTTP policy	<p>If HTTP_Policy is empty, you will not be able to log in and will receive a <code>Page not found</code> error. This is expected behavior for this policy.</p>
Security: invalid certificate	<p>Web Tools and Fabric OS are not consistent in how they report switch certificate status. Web Tools reports a valid certificate with extra characters appended to it as invalid, whereas Fabric OS accepts the certificate and allows a <code>secmodeenable</code> command to complete successfully.</p>
Security: PKICERT utility, CSR syntax	<p>Before using the PKICERT utility to prepare a certificate signing request (CSR), ensure that there are no spaces in the switch names of any switches in the fabric. The Web site that processes the CSRs and generates the digital certificates does not accept switch names containing spaces; CSRs that do not conform to this requirement are rejected.</p>

Table 5: Fabric OS Area Information (Continued)

Fabric OS Area	Description
Security: PKICERT utility, installing certificates	<p>PKICERT v1.0.6 is the most current version of the PKICERT utility.</p> <p>When running the PKICERT utility to install switch certificates in a fabric that did not previously contain switch certificates and now includes a SAN Director 2/128, select the option to specify that certificates are installed on only those switches that do not currently contain certificates. SAN Director 2/128s are delivered with switch certificates preinstalled. Switches that were originally shipped with Fabric OS v2.5, v3.0, and v4.0 and have never installed and enabled Secure Fabric OS do not have certificates installed.</p> <p>If you need to reinstall switch certificates in a SAN Director 2/128, follow these guidelines:</p> <ul style="list-style-type: none"> ■ The host running PKICERT v1.0.6 must be connected to a proxy switch running Fabric OS v2.6.2, v3.1.2, or v4.2. ■ All switches in the fabric other than the SAN Director 2/128 can run v2.6.1, v3.1, v4.1 or newer firmware.
Security: selectelnet	<p>If you try to log in to a switch through a selectelnet client while that switch is in the process of either booting or shutting down, you might see the message, <code>Random number generation failed</code>. The message is printed by the selectelnet client because the switch Telnet service is not running (the service has either already been shut down (if the switch is shutting down), or is not yet established (if the switch is booting)). If the switch is booting, wait a few seconds and try again.</p>
Security: secure mode	<p>If an upgrade from Fabric OS v4.0 to v4.1 or v4.2 is performed, followed by a downgrade to Fabric OS v4.0 and upgrade back to Fabric OS v4.1 or v4.2, the switch password state is reset and prompts the user for new secure mode passwords.</p>
Security: secure mode, passwd Telnet	<p>CAUTION: Using the <code>passwd Telnet</code> command in secure mode to change the password results in all sessions using that password being logged out, including the session that changed the password.</p> <p>This is expected behavior. The session terminates if you change the password in secure mode.</p>
Security: SLAP counter	<p>The SLAP counter is designed to work when all the switches in the fabric are in secure mode. All the switches in the fabric must be in secure mode for accurate SLAP statistics.</p>
Security: SSH login	<p>To properly connect SSH login, wait for secure mode to complete before rebooting or performing HA failover on the SAN Director 2/128. If secure mode is enabled and a reboot occurs before secure mode completes, SSH login does not connect and goes to the wrong MAC address, because the active CP changes after an HA failover.</p>

Table 5: Fabric OS Area Information (Continued)

Fabric OS Area	Description
Single domain	The SAN Director 2/128 can be configured only as a single domain, as opposed to two logical domains in the Core Switch 2/64. In other words, all port blades and slots are a part of that single switch.
WWN card FRU repair	<p>If an HA failover or power cycle occurs during a FRU replacement on the WWN card, the SAN Director 2/128 becomes nonoperational.</p> <p>CAUTION: When performing a FRU replacement on a WWN card, complete the FRU procedure before attempting an HA failover or power cycling the chassis.</p>
Zoning: license	<p>To use zoning in a non-RCS (reliable commit service) mode fabric (that is, in a fabric containing switches with firmware versions other than v2.6.x, v3.1, and v4.1), HP recommends that all appropriate zoning licenses be installed on all the switches in the fabric before attempting to bring a switch in to the fabric.</p> <p>If the zoning license is to be removed, the user must make sure it is reinstalled properly on the affected switch before attempting the <code>cfgenable</code> zoning operation.</p> <p>Failure to follow these steps can cause inconsistency of zoning configuration on the affected switches if a zoning operation is attempted from a remote switch in the fabric. On the affected switches, an error message appears on the console or Telnet session (or by issuing the <code>errShow</code> or <code>errDump</code> command), indicating that the zoning license is missing.</p>
Zoning: domain ID	<p>Domain 0 in a zoning configuration file is invalid but was not previously enforced.</p> <p>Workaround: Prior to upgrading a switch to Fabric OS v4.2.x, ensure that the fabric's zoning configuration does not contain domain ID 0, which is used for zoning. This is specific only to 4.x switches.</p>

Commands Modified in v4.2.x

The `portCfgLPort` command now supports a `mode2` option. Specify 1 to configure the L_Port as a half-duplex L_Port. Specify 0 to configure the L_Port as a full-duplex L_Port. The default value is 0.

Refer to the *HP StorageWorks Fabric OS 4.2.x Command Reference Guide* for more information.

Documentation Updates

This section provides information on last-minute additions or corrections to the documentation.

HP StorageWorks Fabric OS 4.2.x Command Reference Guide

The following commands have been modified:

- `configure`
- `portCfgGPort`
- `portCfgLongDistance`
- `portCfgislMode`

Each change is detailed in the sections that follow.

configure

Change the Domain, R_A_TOV, and E_D_TOV fields in Table 2 as follows:

Field	Default	Range
Domain	1	Varies
R_A_TOV	10000	E_D_TOV * 2 to 12000
E_D_TOV	2000	1000 to R_A_TOV / 2

portCfgLongDistance

Add a note regarding coexistence with the `portCfgislMode` command, as follows:

Note: `portCfgislMode` and `portCfgLongDistance` cannot both be enabled at the same time; otherwise, fabric segmentation occurs.

portCfgislMode

Add a note regarding coexistence with the `portCfgLongDistance` command, as follows:

Note: `portCfgislMode` and `portCfgLongDistance` cannot both be enabled at the same time; otherwise, fabric segmentation occurs

HP StorageWorks Fabric OS 4.2.x Procedures User Guide

On page 59, add the following note after the paragraph:

Domain IDs are assigned dynamically when a switch is enabled. The Domain ID can be set manually; however, to control the number or to resolve a Domain ID conflict when merging fabrics.

Note: If a switch already has a Domain ID when enabled, and that Domain ID conflicts with a switch already in the fabric, the conflict is automatically resolved. The resolution can take several seconds, during which traffic is delayed, potentially causing timeouts.

HP StorageWorks Management Information Base 4.2.x Reference Guide

In Chapter 4, “Entity MIB Objects,” remove the `entPhysicalContainsTable` information on page 132. The correct information appears on page 138.

HP StorageWorks Secure Fabric OS 4.2.x User Guide

On page 29, after the paragraph:

All switches that are shipped with Fabric OS v3.1.2 or v4.2.x ... for information on obtaining digital certificates.

Add the following paragraph:

Switch digital certificates are checked when a switch joins a fabric, either because the switch is added to the fabric or because the switch is booting. Changes to the certificate—if, for example, it is removed or corrupted—might not be noticed until the switch is rebooted.

Issues and Workarounds

[Table 6](#) lists current issues that customers should be aware of and provides workarounds.

Table 6: Issues and Workarounds

Issue	Workaround
<p>Modifying switch and CP IP addresses can cause a Telnet hang. Changing the switch IP address before changing the CP IP address may cause the CP IP address to become inaccessible on a subsequent attempt to set the switch IP address.</p>	<p>When both CP and switch IP addresses need to be changed: set the CP IP address first and then the switch IP address.</p> <p>If this event occurs, telnet into the switch and set the CP IP address again, accepting the default values.</p> <p>When only a switch IP address needs to be changed, set the CP IP address first (keeping the current value) and then the switch IP address to its new value.</p> <p>When only a CP IP address needs to be changed, there is no problem; just change the CP IP address.</p>
<p>After fastbooting the standby CP of the primary FCS and performing a secscsfailover before HA is in sync, the old primary FCS switch's active CP panics.</p>	<p>Issue <code>switchdisable</code> and <code>switchenable</code> to the segmented switch to cause it to rejoin the fabric.</p>
<p>Downloading configurations by line too quickly on v4.1 switches causes the switch to panic and crash.</p>	<p>Do not execute repeated <code>configdownload</code> commands in rapid succession.</p>
<p>New switch IP address does not take effect for Web Tools and Fabric Manager in time.</p> <p>If the IP address on a switch is changed, Fabric Manager posts a message that you must restart Fabric Manager to pick up the changes. After restarting Fabric Manager, it does not pick up the IP address change, retaining the old IP address and causing a complete loss of communication to the switch.</p>	<p>After changing a switch IP address, delete the related fabric from Fabric Manager, restart Fabric Manager, and then rediscover the fabric in Fabric Manager.</p> <p>Under heavy stress conditions, wait a few minutes after restarting Fabric Manager for the new switch IP address to take effect.</p>

Table 6: Issues and Workarounds (Continued)

Issue	Workaround
Running the <code>supportshow</code> command on both the logical switches results in an <code>Out Of Memory</code> condition; the zoning daemon terminates	Do not run the <code>supportshow</code> command on both logical switches at the same time.
NoNodeWWNZoning: The <code>cfgenable</code> command does not activate the feature.	Instead of issuing the <code>cfgenable</code> command, first issue the <code>cfgdisable</code> command and then <code>cfgenable</code> .
Post2 txdpath failed on blades with empty ports (no sfp).	Note that this defect affects the running of diagnostics only on ports that do not have an SFP installed. You can either install an SFP in all ports or use the port list to specify only those ports with an SFP.
When changing interop modes and switching between interop and native mode, an <code>fspfd</code> core dump may occur. This is caused by clearing an element in a data structure beyond the allocated size.	Reboot the standby CP before rebooting the active CP.
When <code>configdownload</code> succeeds on zoneDB, but fails on sec policy, the primary fails to propagate zoneDB to the fabric.	Correct your mistake in the Security section of the configuration file and reissue the <code>configDownload</code> command. <i>Do not reboot the FCS before correcting the configuration file.</i>
The time stamp for firmware download from Fabric Manager-Web Tools is off by 8 hours, compared to the time on the switch.	Note that users who attempt to upgrade switch firmware from Fabric Manager to Web Tools will see a time difference of eight hours.
SwitchCfgTrunk leaves ports disabled, if a long distance port is configured on the switch.	There are two ways to avoid this issue: <ul style="list-style-type: none"> ■ (Recommended) Use the command <code>port port cfg trunk port</code> to enable the trunk for each port. ■ Disable the long distance ports before issuing <code>switchcfgtrunk</code>.
Immediately after activating SCC policy, the retrieve sec policy through API fails.	Wait several seconds after activating the new security policy before issuing a command to retrieve the security policy.
An error is returned in a large fabric with more than 26 switches. This occurs when you use the Fabric Access API to remove multiple FCS members without first performing a save operation.	When using the API, perform a save operation before removing multiple FCS members, if you have more than 26 switches.
Setting <code>fcpprobedisable</code> also sets <code>fanFrameDisable</code>	If you change <code>fcProbeDisable</code> , make sure that you clear <code>fcAL.fanFrameDisable</code> to 0.

Table 6: Issues and Workarounds (Continued)

Issue	Workaround
Web Tools shows incorrect <code>current</code> value on the smart sfp.	Use the <code>sfpshow</code> command to display the correct value of <code>current</code> .
Web Tools does not show duplicate entries contained in zoning on switch, so you cannot delete the duplicate entry.	Deleting one member out of the zone list from the Telnet session may resolve the issue.
The CP error <code>SIOCADDRT: No such device</code> occurs on two separate SAN Director 2/128 CP blades.	This problem can be mitigated by not setting the switch IP address from multiple Telnet or application sources (Telnet windows, Web Tools, Fabric Manager, and so on). If you do see the <code>SIOCADDRT</code> error message, you can resolve the problem by properly setting the IP address with the <code>ipAddrSet</code> command.
For debugging usage, <code>PortID</code> in the <code>portlogdump</code> should refer to the area number of the <code>switchshow</code> when Extended Edge PID is set.	Note that after running <code>portlogdump</code> , the <code>PortID</code> is the logical linear port number, not the area number.
Incompatible flow control warning messages should refer to the <i>area number</i> of the <code>switchshow</code> when extended Edge PID (format 2) is set.	In switch PID format 2 (Extended Edge PID format), this error message is shown as a logical linear port, which is different from the area number of <code>switchshow</code> . Add 16 to the logical linear port number to match the <code>switchshow</code> area number.
Web Tool events use UTC time, rather than adjusted timezone time.	Note that Web Tools and CLI event time are not the same when the <code>tstimezone</code> is configured. When <code>tstimezone</code> is not configured, the event times match.